



TU Dublin May 24 – June 4 2021

Virtual Sustainability Summer School



As a specialist in your field of study, why not meet students from all over the world and work in multidisciplinary teams on community-based sustainability projects? Suited to students from all disciplines and all levels, this project-based course, focused on Sustainability, will be delivered virtually by TU Dublin.

During the course of the two weeks, the **Sustainability Summer School** is offering you an opportunity to develop your systems thinking skills, to be a disciplinary specialist in your professional or research field solving complex sustainability problems in the community.

Among other things, you will meet students and teachers from around the world, work across multidisciplinary fields and acquire useful experience for the sustainability jobs of the future.

In recognising that sustainability is affected by all aspects of human living, TU Dublin is organizing the 2021 Polytechnic Alliance Sustainability Summer School, in collaboration with its partner universities, as a project-based course. Participants will work in small teams where all members combine their knowledge and experience and use design thinking approaches to develop novel solutions to super-wicked problems posed by the project.

Sustainability Summer School Projects as Super-Wicked Problems



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- + Chronic Policy Failure
 - + Time is running out
 - + No central authority to coordinate efforts.
 - + Those solving the problem are causing it.
 - + No single body capable of enforcing solutions.
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I don't want your hope. I don't want you to be hopeful. I want you to panic ... and act as if your house was on fire."

Greta Thunberg

INDICATIVE SCHEDULE

MONDAY 24th May

- 13:00 Welcome – Opening Address
- 14:00 Workshop - Working Across Cultures
- 15:00 Break
- 15:30 Lecture – Introduction to SDGs
- 16:30 Intro to Projects, Teams & Coaches

TUESDAY 25th May

- 13:00 Workshop – Working in Virtual Project
- 14:00 Lecture - Sustainable Food Systems
- 15:00 Break
- 15:30 Collaborative Project Work with Coach
- 17:00 Self-Directed Work - US

WEDNESDAY 26th May

- 09:30 Self-Directed Work - EMEA
- 13:00 Workshop – Design Thinking
- 14:00 Lecture – Sustainable Energy Systems
- 15:00 Break
- 15:30 Collaborative Project Work with Coach
- 17:00 Self-Directed Work - US

THURSDAY 27th May

- 09:30 Self-Directed Work - EMEA
- 13:00 Virtual Tour of TU Dublin
- 14:00 Guest Lecture – Sustainable Transport
- 15:00 Break
- 15:30 Collaborative Project Work with Coach
- 17:00 Self-Directed Work – US
- 19:00 Social Activity –sustainability Literacy Quiz

FRIDAY 28th May

- 09:30 Self-Directed Work - EMEA
- 13:00 Workshop – Online Presentation Skills
- 14:00 Guest Lecture – Finance for Climate Change
- 15:00 Break
- 15:30 Collaborative Project Work with Coach
- 17:00 Self-Directed Work – US



Saturday 29th May

Students will be required to arrange one virtual fieldtrip to a key site contributing to sustainability and report back on Tuesday 1st June. Examples: -

- [Turlough Hill](#) and [Glendalough](#)
- [Carrinagowan Windfarm](#)
- [Airfield Estate](#)
- [Virtual tour - Smart City Sweden](#)
- [Poolbeg Waste to Energy Facility](#)
- [CloghJordan Eco Village](#)
- The Burren Centre
- Guinness Storehouse
- Net Zero Passive House

Tuesday 1st June

- 09:30 Self-Directed Work - EMEA
- 13:00 Presentation on Virtual Field Trips
- 14:00 Lecture - Sustainable Living during COVID19
- 15:00 Break
- 15:30 Collaborative Project Work with Coach
- 17:00 Self-Directed Work - US

Wednesday 2nd June

- 09:30 Self-Directed Work - EMEA
- 13:00 Attendance at PS2021 Events
- 14:00 Attendance at PS2021 Events
- 15:00 Break
- 15:30 Collaborative Project Work with Coach
- 17:00 Self-Directed Work - US

Thursday 3rd June

- 09:30 Self-Directed Work - EMEA
- 13:00 Video Presentations of Project Work
- 14:00 Attendance at PS2021 Sustainability Events
- 15:00 Break
- 15:30 Workshop – Sustainability in Your Universities

Friday 4th June

- 13:00 Workshop – Lessons Learned
- 14:00 Lecture – Super Wicked Problems
- 15:00 Break
- 15:30 Presentation of Certificates, Virtual Lunch and Farewell!

Indicative Projects

What is the place of nature in our ever-changing environment?

In this project, the team you will carry out an inventory of green spaces within 1 km of where they live. We will consider the 'nature of nature'. What kinds of habitats are around, how are they managed, what species are found there, are they troublesome or are they useful? What food is grown? Is there 'wild nature' in your locality? How do people interact with these different natures? The data gathered will be recorded using online GIS maps (ArcGIS) to collect data, such as photos, sound/video recordings and sketches, into one site.



As the project develops the students will compile a master document using their gathered images, sounds, interviews and observations to give a sense of 'nature' across urban and rural areas of. This project addresses SDGs 11 (Sustainable cities and communities) and 15 (Life on Land).

Dr Ken Boyle, TU Dublin

Solar Energy Where the Sun Doesn't Shine

Energy generation and distribution methods have been evolving rapidly over the last few years. Bulk energy production done by large-scale energy generators is being complemented by small-scale energy production, where local homeowners are the greatest beneficiaries of smart grid technology and smart energy generation/distribution techniques. Using customer discovery principles, students will use ethnography and interview data collection methods to obtain feedback on a small-scale solar energy innovation. Students will target potential customers to validate the business model for long-term sustainability.



Dr Lisa Bosman, Purdue Polytechnic

Consumer Living on the Go!

Using circular economy principles, students will enact locally sustainable solutions for make-use-dispose provision of bottled water, providing them opportunities to explore solutions for consumers to reduce plastic packaging in production and consumption systems, including how we could reduce plastic packaging we dispose on the go. During this period, students will be engaged in product ideation and development; from brainstorming to design of a sustainable alternative.



Dr Jennifer Astwood, UW Stout

The Zero Carbon Hotel

As sustainability permeates the tourism industry, there is an increasing requirement on tourism providers to differentiate their competitive positioning through carbon neutrality. Working with staff at the Westlodge Hotel, this project will explore what is required to become certified carbon neutral under the Green Hospitality Programme. Students will be required to evaluate solutions for sustainable energy, water waste management with the aim of reducing the hotel's carbon footprint, whilst also increasing the hotel's involvement with the community.



Dr Catherine Gorman and Otmar Wullich

Using Technology to Enhance Sustainability

This project will examine how technologies such as artificial intelligence can be used to introduce, enhance or secure sustainability. The output of the workshop will be the creation of an interactive educational game, which will allow students to optimise sustainable activity. The project will explore new technologies (e.g. electrification of the automotive sector), how sustainable these new technologies are, and hidden factors involved in these areas

Dr. Philip Lewis, Coventry University

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Making an IMPACT
Teaching and Learning for Student Success